

CHAPTER 12: LANDSCAPE AND TREE STANDARDS

12.1 INTRODUCTION

Trees are essential to life and yet, they are sometimes taken for granted. Unfortunately, one million acres of forest are lost to city growth each year in the United States. The intent of this Section is to provide the minimum standards of landscape and tree plantings within Hilliard. Trees offer many benefits that are obscure to many, which include:

- Air Filtration- filters out particulate matter
- Purifies Water-improves water quality by slowing and filtering rain water
- Cost Reduction- provides shade and shelter, reducing yearly heating and cooling costs by 2.1 billion dollars
- Climate Control-obtained by moderating the effects of sun, wind, and rain
- Increase Property Value- well-cared for landscape properties are 5-20% more valuable than non-landscaped properties.
- Protection- reducing storm run-off and the possibility of flooding (erosion control)
- Glare and Reflection Control –filters out bright sun
- Wind Break, Deflection, and Filtration - obtained by moderating the effects of sun, wind, and rain.
- Sound Barrier- filters out loud noise.

Since trees are a growing asset to any property, maintenance of the trees is crucial for long-term health, safety, and aesthetic value. Many people do not realize that trees have a dollar value of their own. Competent tree appraisers can determine the dollar value of your trees and plants by evaluating the size, type (classification), condition, and location of the tree.

The best way to prepare for an unfortunate and unexpected loss is to take precautionary measures. Even though trees provide many values, hazardous trees can cause significant damage to people's homes if unfavorable conditions exist.

1. Plan your landscape for both beauty and functional value.
2. Protect and preserve to maintain worth.
3. Take pictures of trees and other landscape plants while they are healthy.
4. Check your insurance.
5. Keep accurate records of your landscape and real estate appraisals.
6. Consult an ISA Certified Arborist (<http://www.isa-arbor.com>) every stage in the life of your landscape to prevent unnecessary financial loss when casualty strikes.

12.2 SPECIES AND PLANTINGS

All species listed within Section 12.2 are for the purpose of meeting the requirements as outlined within the Code, with the exception of Section D, Prohibited Species. Species listed in Section D shall not be permitted regardless of code requirements. Any applicant wishing to meet the requirements of the Code with any species other than what is listed within this Section may appeal to the City Planner or Director of Public Service, who will consult with the Shade Tree Commission to make a determination. The Shade Tree Commission will determine if the proposed species is in keeping with the intent of the code requirements.

A. Trees

1.) Small Tree

- Lawn widths 4'-5' and/or existing overhead utilities
- Mature size 25' or less in height

Common Name	Botanical Name
Trident Maple	<i>Acer buergerianum</i>
Amur Maple	<i>Acer ginnala</i>
Tatarian Maple	<i>Acer tataricum</i>
Red Buckeye	<i>Aesculus pavia</i>
Columnar Serviceberry	<i>Amelanchier „Cumulus”</i>
Allegheny Serviceberry	<i>Amelanchier laevis</i>
Apple Serviceberry	<i>Amelanchier x grandifolia</i>
American Hornbeam	<i>Carpinus caroliniana</i>
White Fringetree	<i>Chionanthus virginicus</i>
Kousa Dogwood	<i>Cornus kousa</i>
Corneliancherry Dogwood	<i>Cornus mas</i>
Corneilian Cherry	<i>Cornus mas „Golden Glory”</i>
Thornless Hawthorn	<i>Crataegus crusgalli var. inermis</i>
‘Ohio Pioneer’ Hawthorn	<i>Crataegus punctata var. inermis</i>
Common (thornless) Hawthorn	<i>Crataegus var. inermis</i>
‘Winter King’ Hawthorn	<i>Crataegus viridis</i>
Merrill Magnolia	<i>Magnolia x lobneri „Merrill”</i>
Flowering Crabapple	<i>Malus</i>
Crabapple (No fruit)	<i>Malus „Spring Snow”</i>
Crabapple	<i>Malus species</i>
American Hophornbeam	<i>Ostrya virginiana</i>
‘Kwanzan’ Cherry	<i>Prunus serrulata</i>
‘Canada Red Select’ or	
‘Schubert’ Cherry	<i>Prunus virginiana</i>
Japanese Tree Lilac	<i>Syringa reticulata</i>
Ivory Silk Japanese Tree Lilac	<i>Syringa reticulata „Ivory Silk”</i>

2.) Medium Tree

- Lawn widths 6'-8'
- Mature size 25'-40' in height

Common Name	Botanical Name
Hedge Maple	<i>Acer campestre</i>
Freeman Maple	<i>Acer freemani</i>
Miyabe Maple State Street	<i>Acer miyabei „Morton”</i>
Purpleblow Maple	<i>Acer truncatum</i>
Ruby Red Horsechestnut	<i>Aesculus carnea „Briotii”</i>

Whitespire, Heritage Birch
 Upright European Hornbeam
 American Yellowwood
 Turkish Filbert
 Washington Hawthorn
 Hardy Rubber Tree
 Carolina Silverbell
 Golden Rain Tree
 Black Gum
 American Hophornbeam
 Amur Cork tree
 Sargent Cherry
 Japanese Flowering Cherry
 Jac or Jill Flowering Pear
 Sawtooth Oak
 Shumard Oak
 Corinthian Little Leaf Linden
 Greenspire Little Leaf Linden
 Sterling Silver Linden
 Lacebark Elm
 Patriot Elm

Betula platyphylla var. *japonica*
Carpinus betulus „Fastigiata”
Cladrastis kentukea (lutea)
Corylus colurna
Crataegus phaenopyrum
Eucommia ulmoides
Halesia carolina
Koelreuteria paniculata
Nyssa sylvatica
Ostrya virginiana
Phellodendron amurense
Prunus sargentii
Prunus serrulata species
Pyrus c. „Jac” or „Jill”
Quercus acutissima
Quercus shumardii
Tilia cordata „Corzam”
Tilia cordata „Greenspire”
Tilia tomentosa „Sterling”
Ulmus parvifolia
Ulmus x „Patriot

3.) Large Tree

- Lawn widths 8’ or greater
- Mature size 40’ and over in height

Common Name	Botanical Name
Norway Maple	<i>Acer platanoides</i>
Sugar Maple	<i>Acer saccharum</i>
Freemantle Maple	<i>Acer x freemantle</i>
Avalam Birch	<i>Betula</i> x ‘Avalam’
European Hornbeam	<i>Carpinus betulus</i>
Sugar Hackberry	<i>Celtis laevigata</i>
Common Hackberry	<i>Celtis occidentalis</i>
Prairie Pride Hackberry	<i>Celtis occidentalis</i> ‘Prairie Pride’
Katsuratree	<i>Ceridiphyllum japonicum</i>
Turkish Filbert	<i>Corylus colurna</i>
Hardy Rubber Tree	<i>Eucommia ulmoides</i>
Ginkgo (male forms only please)	<i>Ginkgo biloba</i>
Thornless Honeylocust	<i>Gleditsia triacanthos</i> var. <i>inermis</i>
Kentucky Coffeetree	<i>Gymnocladus dioica</i>
European Larch	<i>Larix decidua</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Tuliptree, Yellow Poplar	<i>Liriodendron tulipifera</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Dawn Redwood	<i>Metasequoia glyptostroboides</i>
Sycamore	<i>Platanus occidentalis</i>
London Plane Tree	<i>Platanus x acerifolia</i> „Exclamation”
Sawtooth Oak	<i>Quercus acutissima</i>
Swamp White Oak	<i>Quercus bicolor</i>
Scarlet Oak	<i>Quercus coccinea</i>
Shingle Oak	<i>Quercus imbricaria</i>
Bur Oak	<i>Quercus macrocarpa</i>
Chinkapin Oak	<i>Quercus muehlenbergii</i>
Red Oak	<i>Quercus rubra</i>

Shumard Oak	<i>Quercus shumardii</i>
Regal Prince Oak	<i>Quercus robur</i> "Long"
Japanese Pagodatree	<i>Sophora japonica</i>
Bald Cypress	<i>Taxodium ditichum</i>
American Linden	<i>Tilia americana</i>
Silver Linden	<i>Tilia tomentosa</i>
Princeton American Elm	<i>Ulmus americana</i> „Princeton"
Valley Forge Elm	<i>Ulmus americana</i> „Valley Forge"
Dynasty Elm	<i>Ulmus parvifolia</i> „Dynasty"
Frontier Elm	<i>Ulmus parvifolia</i> „Frontier"
Accolade Elm	<i>Ulmus x</i> „Morton"
Elm species	<i>Ulmus x spp</i>
Japanese Zelkova	<i>Zelkova serrate</i>

4.) Evergreen Tree

- Lawn widths: 8' or greater
- Mature size: 40' and over in height

Common Name	Botanical Name
White Fir	<i>Abies concolor</i>
Norway Spruce	<i>Picea abies</i>
White Spruce	<i>Picea glauca</i>
Serbian Spruce	<i>Picea omorika</i>
Colorado Spruce	<i>Picea pungens</i>
Douglas Fir	<i>Pseudotsuga menziesii</i>
Canadian Hemlock	<i>Tsuga canadensis</i>

B. Shrubs and Grasses

1.) Shrubs

- Lawn widths: 2' or greater
- Mature size: 2' or greater

Common Name	Botanical Name
Little Leaf Boxwood	<i>Buxus microphylla</i>
Common Boxwood	<i>Buxus sempervirens</i>
Falsecypress	<i>Chamaecyparis obtusa</i>
Nordic Holly	<i>Ilex glabra</i> 'Chamzin'
Blue Holly	<i>Ilex x meserveae</i>
Chinese Juniper	<i>Juniperis chinensis</i> (many cultivars)
Rocky Mountain Juniper	<i>Juniperis scopulorum</i> (many cultivars)
Pyramidal Japanese Yew	<i>Taxus cupressata</i> 'Capitata'
Media Yew	<i>Taxus x media</i> (many cultivars)
Dark Green Arborvitae	<i>Thuja occidentalis</i> (many cultivars)

2.) Ornamental Grasses

- Lawn widths 2' or greater
- Mature size 2' or greater
- All ornamental grasses must be "clumping" type. Rhizomatous ornamental grasses shall not be acceptable for required plantings.

Common Name	Botanical Name
Media Yew	<i>Taxus x media</i> (many cultivars)
Maiden Grass	<i>Miscanthus sinensis</i> "Gracillimus"
Zebra Grass	<i>Miscanthus sinensis</i> "Zebrinus"

Porcupine Grass
Morning Light Grass
Silver Grass
Blue Oat Grass
Blue Fescue
Tufted Hair Grass

Miscanthus sinensis "Stricta"
Miscanthus sinensis "Morning Light"
Miscanthus sinensis "Variegatus"
Helictotrichon sempervirens
Festuca ovina
caespitosa

C. Native Prairie Grasses and/or Wildflowers

1.) Prairie Grasses

Common Name	Botanical Name
Big Bluestem	<i>Andropogon gerardii</i>
Little Bluestem	<i>Schizachyrium scoparium</i>
Indian Grass	<i>Sorghastrum nutans</i>
Switch Grass	<i>Panicum virgatum</i>

2.) Wildflower Pockets

Common Name	Botanical Name
Nodding Wild Onion	<i>Allium cernuum</i>
Butterfly Weed	<i>Asclepias tuberosa</i>
Canadian Milk Vetch	<i>Astragalus canadensis</i>
Indian Paintbrush	<i>Castilleja coccinea</i>
Partridge Pea	<i>Chamaecrista fasciculata</i>
Purple Coneflower	<i>Echinacea purpurea</i>
Tall Boneset	<i>Eupatorium altissimum</i>
Flowering Spurge	<i>Euphorbia corollata</i>
Stiff Gentian	<i>Gentiana quinquefolia</i>
Sawtooth Sunflower	<i>Helianthus grosseserratus</i>
Ox Eye Sunflower	<i>Heliopsis helianthoides</i>
Dense Blazingstar	<i>Liatris spicata</i>
Scaly Blazingstar	<i>Liatris squarrosa</i>
Wild Bergamot	<i>Monarda fistulosa</i>
Grey-Headed Coneflower	<i>Ratibida pinnata</i>
Black-eyed Susan	<i>Rudbeckia hirta</i>
Prairie Dock	<i>Silphium terebinthinaceum</i>
Whorled Rosinweed	<i>Silphium trifoliatum</i>
Riddell's Goldenrod	<i>Solidago riddellii</i>
Stiff Goldenrod	<i>Solidago rigida</i>
Ohio Spiderwort	<i>Tradescantia ohimensis</i>

3.) No-Mow Turf

Common Name	Botanical Name
Hard Fescue	<i>Festuca brevipila</i>
Sheep Fescue	<i>Festuca ovina</i>
Chewings Fescue	<i>Festuca rubra</i> subs. <i>fallax</i>
Red Fescue	<i>Festuca rubra</i>
Creeping Red Fescue	<i>Festuca rubra</i> var. <i>rubra</i>

4.) Naturalized

- As approved by the City Planner and / or Shade Tree Commission

5.) Temporary Cover Crop

Common Name	Botanical Name
Winter Rye Grass / Grain Rye	<i>Secale cereal</i>

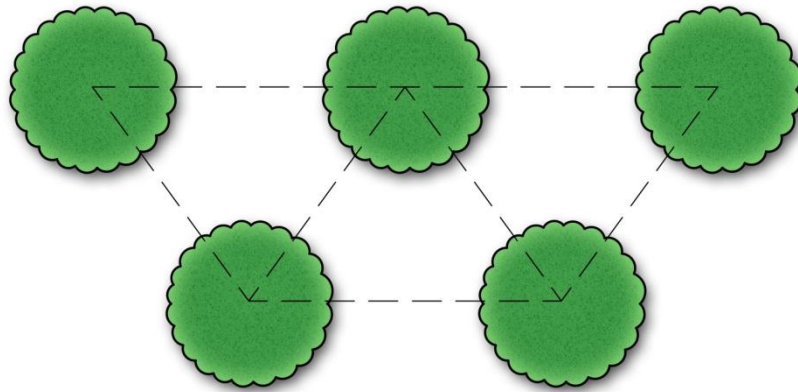
D. Prohibited Species

1.) Trees

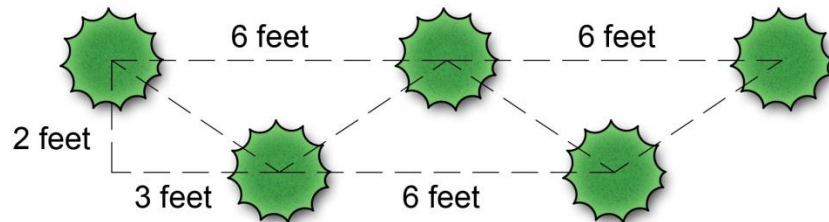
Common Name	Botanical Name
Box Elder	<i>Acer negundo</i>
Silver Maple	<i>Acer saccharinum</i>
Tree of Heaven	<i>Ailanthus altissima</i>
Paper Birch	<i>Betula papyrifera</i>
European White Birch	<i>Betula pendula</i>
Northern Catalpa	<i>Catalpa speciosa</i>
Green Ash	<i>Fraxinus pennsylvanica</i>
White Ash	<i>Fraxinus americana</i>
Black Ash	<i>Fraxinus nigra</i>
Ginkgo (female)	<i>Ginkgo biloba</i>
Osage-orange	<i>Maclura pomifera</i>
Apple	<i>Malus pumila</i>
Mulberry	<i>Morus species</i>
White Pine	<i>Pinus strobus</i>
Austrian Pine	<i>Pinus nigra</i>
Poplar	<i>Populus species</i>
Bradford Pear 'Bradford'	<i>Pyrus calleryana 'Bradford'</i>
Columnar English Oak	<i>Quercus robur 'Fastigiata'</i>
Black Locust	<i>Robinia pseudoacacia</i>
Willow	<i>Salix species</i>
European Mountain Ash	<i>Sorbus aucuparia</i>
Siberian Elm	<i>Ulmus pumila</i>

E. Placement

- 1.) **Clustering** - Where trees are required based on a linear footage calculation, it may be possible for these trees to be planted in clusters as opposed to being evenly spaced in a line. In the case where clustering is used, no tree shall be located any closer than ten (10) feet, or any further than fifty (50) feet from the next closest required tree. Any such clustering plan must be approved by the Director of Public Service prior to installation of the landscaping.
- 2.) **Staggering** - When required for perimeter parking landscaping and buffering, trees and shrubs may be required to be planted in staggered rows to provide the effective diagonal planting of the plants.
 - a. **Tree Staggering** - Trees should be planted in a manner to provide for equal spacing both in width and depth between each plant.



- b. **Shrub Staggering** - Shrubs should be planted in an alternating pattern formed by at least two rows, two (2) feet apart on center, each of which is made up of shrubs six (6) feet on center.

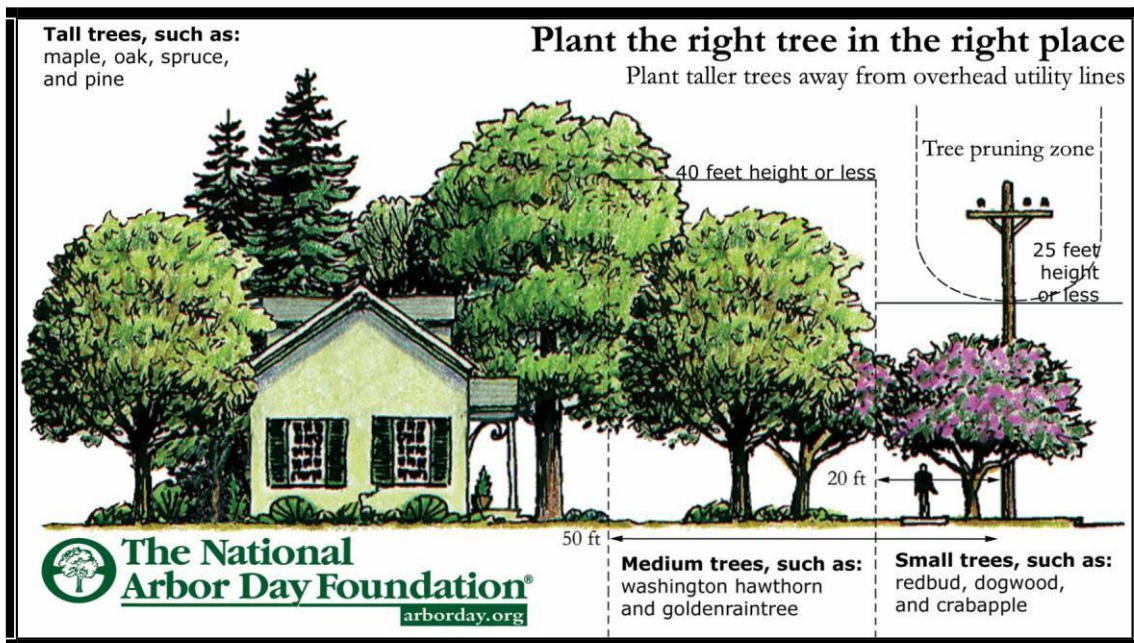


12.3 HILLIARD TREE MANUAL

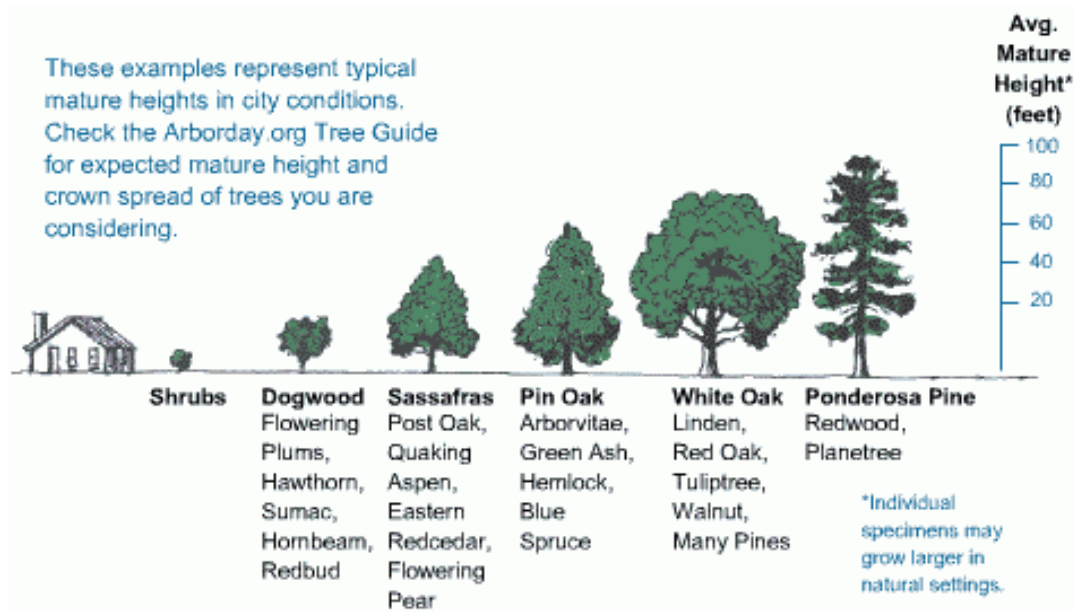
A healthy community forest begins with careful planning. With a little research and a simple layout, you can produce a landscape that will cool your home in summer and tame the winter winds. Your well-planned yard will contain trees that grow well in the soil and moisture of your neighborhood. Your trees will be properly placed to avoid collisions with power lines and buildings, and the aesthetics will increase your property value.

A proper landscape plan takes each tree into consideration:

1. **Height.** Will the tree bump into anything when it is fully grown?
2. **Canopy spread.** How wide will the tree grow?
3. **Is the tree deciduous or coniferous?** (Will it lose its leaves in the winter?)
4. **Form or shape.** A columnar tree will grow in less space. A round and V-shaped species provide the most shade.
5. **Growth rate.** How long will it take for your tree to reach its full height? Slow growing species typically live longer than fast growing species.
6. **Soil, sun, and moisture** requirements.
7. **Fruit.** No one wants messy droppings on busy sidewalks.
8. **Hardiness zone** indicates the temperature extremes in which a tree can be expected to grow. Check with your community's shade tree commission or state forestry department or a local county cooperative extension agent for a list of trees suitable for planting in your specific hardiness zone.



Available space is probably the consideration most overlooked or misunderstood when deciding what tree to plant. Before you plant, it is important to know what the tree will look like as it nears maturity. Consider its height, crown spread, and root space.



Basic Spacing Guide			
	Spacing plant	Min. spacing from wall of 1- story building	Min. spacing from corner of 1- story building
Small trees (30' or less)	6-15'	8-10'	6-8'
Medium trees (30-70')	30-40'	15'	12'
Large trees (70' or more)	40-50'	20'	15'

The character of tree crowns and the form or shape of trees varies among species as much as leaves shapes or bark patterns. Shape is another clue to how well a tree will fit the space you have available, what problems might occur, and how well it will help meet the goals you have for your property.

V-Shaped



Hackberry

Columnar



Lombardy Poplar

Pyramidal



Pin Oak

Round



White Oak

Oval



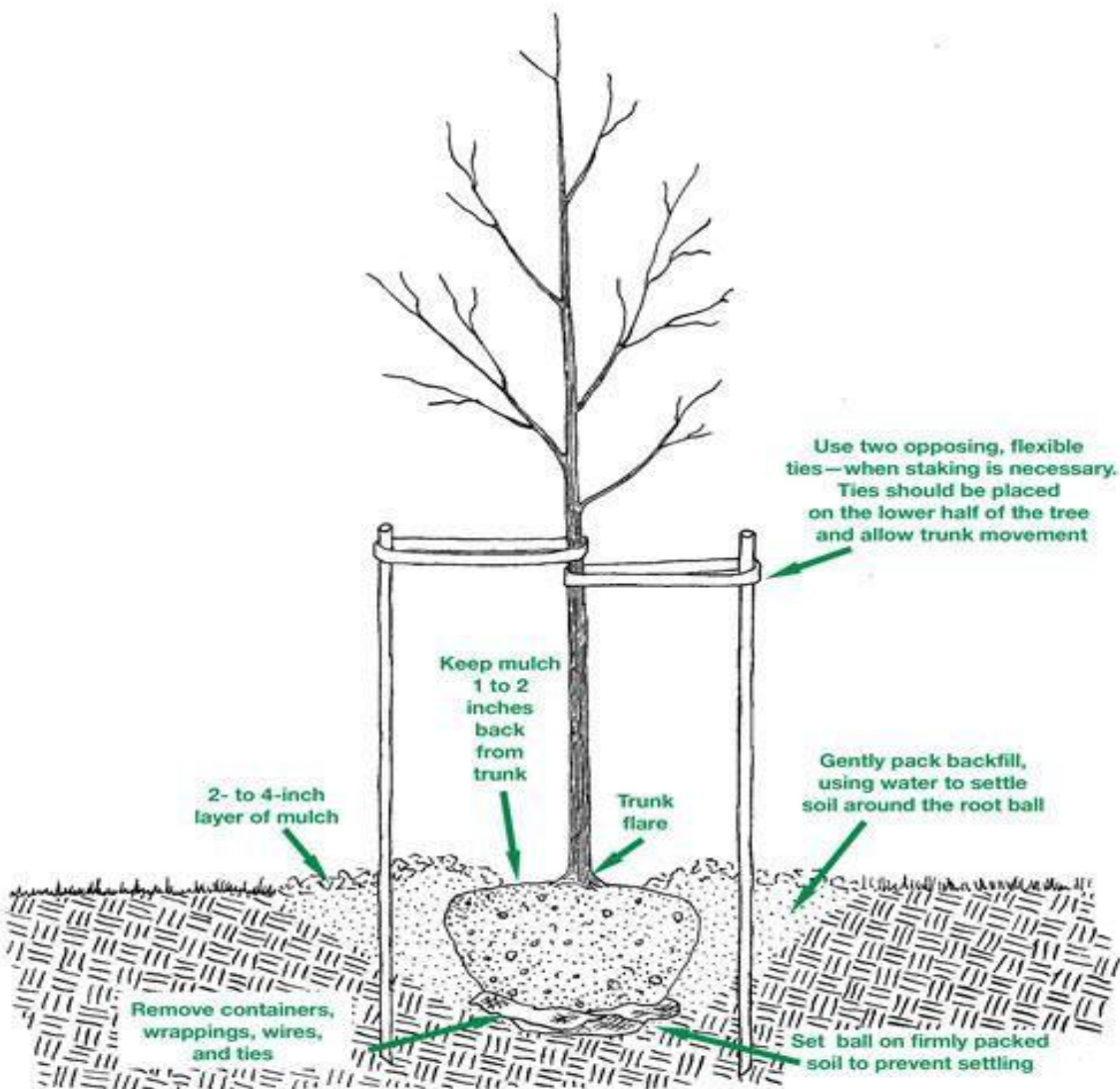
Sugar Maple

12.3.1 PROPER PLANTING GUIDELINES

The ideal time to plant trees and shrubs is during the dormant season, autumn after leaf drop or early spring before bud-break. Weather conditions are cool and allow plants to establish roots in the new location before spring rains and summer heat stimulate new top growth. However, trees properly cared for in the nursery or garden center, and given the appropriate care during transport to prevent damage, can be planted throughout the growing season. Proper handling during planting is essential to ensure a healthy future for new trees and shrubs. Before you begin planting your tree, be sure you have had all underground utilities located prior to digging.

Call before you Dig

Ohio Utilities Protection Service (OUPS) (800)-362-2764 (OUPS)



12.3.2 PLANTING BALLED AND BURLAPPED TREES:

1. **Dig a shallow, broad planting hole.** Make the hole wide, as much as three times the diameter of the root ball but only as deep as the root ball. It is important to make the hole wide because the roots on the newly establishing tree must push through surrounding soil in order to establish. On most planting sites in new developments, the existing soils have been compacted and are unsuitable for healthy root growth. Breaking up the soil in a large area around the tree provides the newly emerging roots room to expand into loose soil to hasten establishment.
2. **Identify the trunk flare.** The trunk flare is where the roots spread at the base of the tree. This point should be partially visible after the tree has been planted (see diagram). If the trunk flare is not partially visible, you may have to remove some soil from the top of the root ball. Find it so you can determine how deep the hole needs to be for proper planting.
3. **Remove twine from the root ball.** Lifting only from the bottom of the root ball, position tree on firm pad so that it is straight and top of root flare is level with the surrounding soil. Remove all twine from the root ball. If present, remove and discard at least the top one half of the wire basket. Burlap shall be removed from the top to a point halfway down the root ball and discarded.
4. **Place the tree at the proper height.** Before placing the tree in the hole, check to see that the hole has been dug to the proper depth... The majority of the roots on the newly planted tree will develop in the top 12 inches of soil. If the tree is planted too deeply, new roots will have difficulty developing because of a lack of oxygen. It is better to plant the tree a little high, 2 inches above the base of the trunk flare, than to plant it at or below the original growing level. This planting level will allow for some settling (see diagram). To avoid damage when setting the tree in the hole, always lift the tree by the root ball and never by the trunk.
5. **Straighten the tree in the hole.** Before you begin backfilling, have someone view the tree from several directions to confirm that the tree is straight. Once you begin backfilling, it is difficult to reposition the tree.
6. **Fill the hole gently but firmly.** Fill the hole about one-third full and gently but firmly pack the soil around the base of the root ball. Then, if the root ball is wrapped, cut and remove any fabric, plastic, string, and wire from around the trunk and root ball to facilitate growth (see diagram). Be careful not to damage the trunk or roots in the process. Fill the remainder of the hole, taking care to firmly pack soil to eliminate air pockets that may cause roots to dry out. To avoid this problem, add the soil a few inches at a time and settle with water. Continue this process until the hole is filled and the tree is firmly planted. It is not recommended to apply fertilizer at the time of planting.

Stake the tree, if necessary. If the tree is grown and dug properly at the nursery, staking for support will not be necessary in most home landscape situations. Studies have shown that trees establish more quickly and develop stronger trunk and root systems if they are not staked at the time of planting. We recommend to only stake tree if tree trunk moves with-in the root-ball. Remember to remove support staking and ties after the first year of growth.

7. **Mulch the base of the tree.** Mulch is simply organic matter applied to the area at the base of the tree. It acts as a blanket to hold moisture, and it moderates soil temperature extremes. A 2- to 3-inch layer is ideal.

12.3.3 Planting Containerized or Grow Bag Trees:

1. If not readily apparent, locate root flare by removing excess soil.
2. Dig tree hole at least two times wider than the tree ball with sloping sides. Dig hole to a depth so the located root flare, at the first order lateral root, will be at finished grade.
3. Create a firm soil mound at the bottom of the planting hole.
4. Remove tree from container or grow bag and completely tease apart root system, repositioning any girdling or potentially girdling roots.
5. Spread roots over soil mound so that root flare is at finished grade and the tree is straight.
6. With clean, sharp pruning tools, prune off any secondary/adventitious, girdling, and potential girdling roots.
7. Backfill planting hole with existing un-amended soil and thoroughly water.
8. Mulch the entire planting surface with composted bark applied no less than two inches (2") deep and no more than three inches (3") deep, leaving three inches (3") adjacent to the tree trunk free of mulch.

12.3.4 Planting Bare Root Trees:

1. Dig tree hole at least two times wider than the tree root ball with sloping sides. Dig hole to a depth so the located root flare, at the first order lateral root, will be at finished grade.
2. Create a firm soil mound at the bottom of the planting hole.
3. Spread roots over soil mound so that root flare is at finished grade and the tree is straight.
4. With clean, sharp pruning tools, prune off any secondary/adventitious, girdling, and potential girdling roots.
5. Backfill planting hole with existing un-amended soil and thoroughly water.
6. Mulch the entire planting surface with composted bark applied no less than two inches (2") deep and no more than three inches (3") deep, leaving three inches (3") adjacent to the tree trunk free of mulch.



1: Unpack tree and soak in water 3 to 6 hours. Do not plant with packing materials attached to roots, and do not allow roots to dry out.



4: Dig a hole, wider than seems necessary, so the roots can spread without crowding. Remove any grass within a three-foot circular area. To aid root growth, turn soil in an area up to 3 feet in diameter.



2: Plant the tree at the same depth it stood in the nursery, without crowding the roots. Partially fill the hole, firming the soil around the lower roots. Do not add soil amendments.



5: Shovel in the remaining soil. It should be firmly, but not tightly packed with your heel. Construct a water-holding basin around the tree. Give the tree plenty of water.



3: After the water has soaked in, place a 2-inch deep protective mulch area 3 feet in diameter around the base of the tree (but not touching the trunk).



6: Water the tree generously every week or 10 days during the first year.

12.3.5 Mulching:

Studies show that a mulched tree can grow double or even triple the rate of an un-mulched tree. So not only will mulch add artistic flair to your landscape, it will help you develop a good root system and a generally healthy tree by:

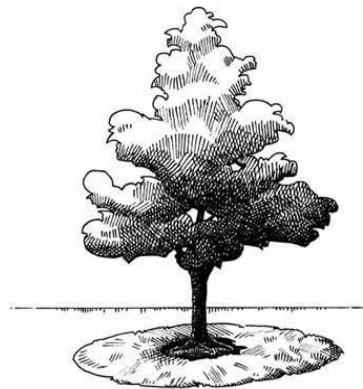
- insulating soil
- retaining moisture
- blocking weeds
- keeping soil from compacting
- protecting against lawnmower damage

How deep should mulch be? The ideal depth is two to three inches. If you're using shredded hardwood mulch, lay it about four inches deep to allow for settling.

Do Not Volcano Mulch



"Mulch volcanoes" cause many problems for trees.



Do Mulch Correctly

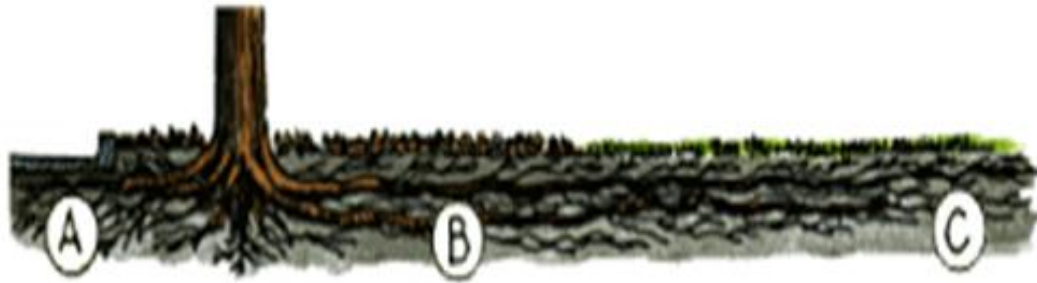
A properly mulched tree will have a 2 to 3 inch layer of mulch in a doughnut shaped ring. The ring should extend out to the tree's drip line if possible.

What kind of mulch should you use? There are two basic types of mulch: organic and inorganic. Organic mulches, derived from plant material, decompose to enrich and improve the soil. Manure, sphagnum peat moss and pine needles are all examples of organic mulch. The most popular mulch for both weed control and longevity is shredded hardwood, chip, or chunk bark. This allows for better water and air movement to the soil and tree roots.

Provide follow-up care. Keep the soil moist but not soaked; over-watering causes leaves to turn yellow or fall off. Trees should be water once at least once a week (barring rain) and more frequently during hot weather. When the soil is dry below the surface of the mulch, it is time to water. Continue until mid-fall, tapering off for lower temperatures that require less-frequent watering.

If a tree is planted correctly, it will grow twice as fast and live at least twice as long as one that is incorrectly planted. Ideally, dig or rot till an area one foot deep and approximately 3 times the diameter of the root ball. The prepared soil will encourage root growth beyond the root ball and results in a healthier tree.

12.3.6 Where Roots Really Grow



- A: Because roots need oxygen, they don't normally grow in the compacted oxygen-poor soil under paved streets.
- B: The framework of major roots usually lies less than 8 to 12 inches below the surface.
- C: Roots often grow outward to a diameter one to two times the height of the trees.

We don't always appreciate how far roots can extend. Understanding how and where roots grow will help you avoid damage from trenching and construction. Basic elements that influence plant health include sufficient water and light, and a proper balance of nutrients. Too much or too little of any of these environmental conditions may cause plant stress.

After investing countless hours of hard labor and hard-earned dollars on tree landscaping, the last thing you need is to see your efforts ruined by an onslaught of disease and insects. The first step in protecting your valuable green assets is prevention. Be sure to plant trees that are well suited to your location and that are resistant to common insect and disease infestations. Most insects and diseases take advantage of plants that are under stress so watering, mulching, and pruning are essential to preventing outbreaks. Proper diagnosis is also the key to treating the problem.

12.3.7 Why Hire an Arborist?

An arborist is a specialist in the care of individual trees. Arborists are knowledgeable about the needs of trees and are trained and equipped to provide proper care. Hiring an arborist is a decision that should not be taken lightly. Proper tree care is an investment that can lead to substantial returns. Well-cared-for trees are attractive and can add considerable value to your property. Poorly maintained trees can be a significant liability. Pruning or removing trees, especially large trees, can be dangerous work. Tree work should be done only by those trained and equipped to work safely in trees. There are several categories for Certification as an Arborist.

The ISA Certification credential can be viewed as a pyramid with the largest group in the base. These credentials were developed based on the knowledge required to obtain each one.



What Is a Certified Arborist?

Certified Arborists are individuals who have achieved a level of knowledge in the art and science of tree care through experience and by passing a comprehensive examination developed by some of the nation's leading experts on tree care. Certified Arborists must also continue their education to maintain their certification. Therefore, they are more likely to be up to date on the latest techniques in arboriculture.

To check for a certified arborist in your area go to
<http://www.isaarbor.com/findArborist/findarborist.aspx>

Welcome to the City of Hilliard Service Request Center

City of Hilliard Service Request Center <http://src.hilliardohio.gov/>

The City of Hilliard has provided this site to aid our residents, employees, and corporate customers in finding information, making inquiries, and requesting city services. The Hilliard Service Request Center (SRC) is available online 24-hours-a-day, 365-days-a-year for your convenience.

To begin, please enter your e-mail address and password in the boxes below, or if you don't have a user account, please click on the 'Create a user account' link. User accounts are free, and only take a few minutes to set up. User accounts are required to access the features of this site, and they allow us to contact you should the need arise. Users should read the City's [privacy policy](#) prior to creating a user account.

Information concerning various city services, city requirements, city codes, recreation opportunities and various other items are available through the following topic search or list menu. Each topic also has a service request form available by following the associated link. Use either the "Topic Keyword Search" or select the appropriate category and topic in the list boxes below, and then proceed by following the on-screen directions.

Usage Notes:

You have selected the Street Trees category. Please select a request type from the types list in order to continue.

STREET TREE TIPS

Here are some very important and helpful tips to keep your street tree healthy and growing for decades. Please remember these trees were planted to add value and beauty to your home and to the neighborhood

- **City Tree or Mine?**

Street trees are planted in the City right of way or easement generally located between the sidewalk and street. These trees are considered property of the public. The City of Hilliard typically handles the planting, pruning, and removal of these trees. Homeowners are asked to cooperate with the City by watering, mulching, and removing the sucker growth located at the base of the tree.

According to the City of Hilliard's Street Tree Ordinance, developers are responsible for the installation of new street trees. *"If"* the tree dies within the first year of planting the developer must replace it. If the tree dies after the first year the City of Hilliard will replace it. The City will notify the homeowner of planting, pruning, and the removal of street trees.

- **Please water** - A slow running hose at the base of the tree for a half hour once a week could save its life. We recommend 10- 20 gallons of water once a week, depending on the size of the tree to be installed.
- **Thank you for mulching** - Remember to keep the mulch away from the tree trunk bark. Mulch applied high around the base of the tree bark will create a dark and moist environment, perfect for harboring disease and insects.
- **Please remove ugly sucker-growth** - (suckers: A secondary shoot produced from the base or roots of a woody plant that gives rise to a new plant)

This secondary growth is located around the base of the tree. Sucker growth is not only unattractive, but also can harbor disease and insects. Simply prune the sucker- growth off as close to the ground as possible.



STREET TREE TIPS



Your Street Trees May Be City Trees

If you live in a town or city, the trees near the street (often between the sidewalk and street), are probably city-owned. The city should have a program for planting and caring for these trees. You should support your city forestry program and encourage your town to be a Tree City U.S.A.

Respect local ordinances as to what trees can be planted, how to prune, etc. Encourage your town to fully fund a quality community forestry program.

Street trees are planted in the City right of way or easement generally located between the sidewalk and street. These trees are considered property of the public. The City of Hilliard typically handles the planting, pruning, and removal of these trees. Homeowners are asked to cooperate with the City by watering, mulching, and removing the sucker growth located at the base of the tree.

Street Tree Planting Requirements

All builders are required to plant large or medium trees along the public streets of their developments in such a manner, type, quantity and location as required by the Enforcement Officer, who may consult with the Shade Tree Commission. Any undeveloped street or existing street with undeveloped frontage shall conform to these requirements at the time of occupancy of each unit. Small trees may be used upon application to and permission from the Enforcement Officer. Such request may be granted upon the showing by the applicant that the small trees are more appropriate for the area.

The tree to be planted must be a desirable tree species, as determined by the Enforcement Officer, in consultation with the Shade Tree Commission and the Master Street Tree Plan.

The tree location is to be at least thirty feet from street intersections and ten feet from fire hydrants, utility poles or drives.

Tree Fun Facts

The following are some statistics on just how important trees are in a community.

"The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day." — *U.S. Department of Agriculture*

"Landscaping can reduce air conditioning costs by up to 50 percent, by shading the windows and walls of a home." — *American Public Power Association*

"If you plant a tree today on the west side of your home, in 5 years your energy bills should be 3% less. In 15 years the savings will be nearly 12%." — *Dr. E. Greg McPherson, Center for Urban Forest Research*

"A mature tree can often have an appraised value of between \$1,000 and \$10,000." — *Council of Tree and Landscape Appraisers*

"In one study, 83% of realtors believe that mature trees have a "strong or moderate impact" on the salability of homes listed for under \$150,000; on homes over \$250,000, this perception increases to 98%." — *Arbor National Mortgage & American Forests*

"Landscaping, especially with trees, can increase property values as much as 20 percent." — *Management Information Services/ICMA*

"One acre of forest absorbs six tons of carbon dioxide and puts out four tons of oxygen. This is enough to meet the annual needs of 18 people." — *U.S. Department of Agriculture*

"There are about 60 to 200 million spaces along our city streets where trees could be planted. This translates to the potential to absorb 33 million more tons of CO2 every year, and saving \$4 billion in energy costs." — *National Wildlife Federation*

The Biggest Tree in the United States is “The General Sherman Tree” Giant Sequoia in California

- Its circumference is 1013 inches or 84.42 feet
- Its diameter is 322.6115 inches or 26.8853 feet
- Its trunk has a volume of 50, 000 cubic feet
- It is 275 tall
- It is 107 feet in average crown spread

America's National Tree The Oak. America has the grandest trees on earth--the largest, the oldest, and some of the most magnificent. Now, with Congressional passage and presidential signing of a historic bill, America has an official National Tree--the Oak.

City of Hilliard Tree Percentages

Common Names/Botanical Names	# Trees	%
Freeman Maples <i>Acer x „Freemanii“</i>	529	6.00%
Hedge Maple <i>Acer campestre</i>	178	2.00%
Norway Maples <i>Acer platanoides</i>	1000	10%
Red Maples <i>Acer rubrum</i>	338	3%
Sugar Maples <i>Acer saccharum</i>	335	3%
Serviceberry <i>Amelanchier</i>	142	2%
River Birch <i>Betula nigra</i>	103	1%
Redbud <i>Cercis canadensis</i>	60	1%
Hawthorns <i>Crateagus</i>	88	1%
Hardy Rubber Tree <i>Eucommia ulmoides</i>	27	1%
White & Green Ash <i>Fraxinus americana & pennsylvanica</i>	1457	15%
Ginkgo <i>Ginkgo bilboa</i>	48	1%
Honeylocust <i>Gleditsia</i>	551	6%
Kentucky Coffee Trees <i>Gymnocladus dioicus</i>	106	1.00%
Sweetgum <i>Liquidambar</i>	502	5%
Crabapples <i>Malus</i>	692	8%
Austrian Pines <i>Pinus nigra</i>	10	1.00%
Cherry <i>Prunus Callery</i>	29	1.00%
Pears <i>Pyrus calleryana</i>	1236	14%
Pyramidal English Oak <i>Quercus robur „Fastigiata“</i>	37	1.00%
Red Oak <i>Quercus rubra</i>	379	4%
Ivory Silk Lilac <i>Syringa reticulata „Ivory Silk“</i>	97	1%
Little Leaf Lindens <i>Tilia cordata</i>	412	5%
Lacebark Elms <i>Ulmus parvifolia</i>	410	5%
Zelkova	74	1%

Street Tree Requirements

- The tree to be planted must be a desirable tree species, as determined by the Enforcement Officer, in consultation with the Shade Tree Commission and the Master Street Tree Plan.
- The minimum spacing between the new street tree(s) and other trees shall be forty-five feet for large trees, thirty-five feet for medium trees, and twenty-five feet for small trees. (See Definitions) The maximum spacing between trees shall be fifty feet for large trees, forty feet for medium trees, and thirty feet for small trees.
- The minimum distance between the tree and the edge of the street shall be four feet for a large tree, three feet for a medium tree and two feet for a small tree. In areas where a sidewalk exists or is proposed, the minimum distance between the tree trunk and both the edges of the street and the sidewalks shall be four feet for a large tree, three feet for a medium tree, and two feet for a small tree, thereby creating a minimum of an eight foot tree lawn for large trees, six foot tree lawn for medium tree and four foot tree lawn for small trees.
- The tree location is to be at least thirty feet from street intersections and ten feet from fire hydrants, utility poles or drives.
- A small tree is to be used when planting under or within ten lateral feet of overhead utility wires. A small or medium tree is to be used when planting within ten to twenty lateral feet of overhead utility wires
- The trees shall be of the genus and species as approved by the Enforcement Officer, who may consult with the Shade Tree Commission, to be planted continuous down each street as per the Master Street Tree Plan.

Street Tree Inspection

The Enforcement Officer shall inspect and approve the tree following planting. The minimum trunk caliper measured at six inches above the ground for all street trees shall be no less than two inches. The Developer shall be required to maintain and warrant the trees survivability for one year after each tree is inspected and approved by the Enforcement Officer. All Street Trees must conform to the City of Hilliard Master Street Tree Plan.

Tree Protection

All existing trees shall be preserved by the property owner, developer or person in possession and control of the property. However, the Enforcement Officer may approve the removal of an existing tree, and issue a permit to do so, when the tree interferes with the proper development of a parcel, provided that the parcel is the subject of an application for approval of a preliminary or final plat, a zoning certificate, site plan, variance or a conditional use permit, or demolition permit, and one of the following applies:

- The tree is located within a public right-of-way or easement; or
- The tree is located within the area to be covered by a proposed structure(s) or within twelve (12) feet from the perimeter of a structure(s), and the proposed structure(s) cannot be located in a manner to avoid removal of the tree while at the same time permitting desirable and logical development of the lot; or
- The tree is located within a proposed driveway, parking area, lot or structure; or
- Trees that in the judgment of the Enforcement Officer is damaged, diseased, over mature, or
- Which interfere with utility lines, are an inappropriate or undesirable species, are located in an unsafe manner, or
- Are located in an undesirable location.

Tree Survey and Protection: Prior to any construction or demolition activities on a site containing existing trees, a tree preservation plan including a tree survey of existing trees (including trunk diameter, location and species) must be submitted to the City for review and approval. During all phases of demolition or construction, including a ten-foot radius from any public tree's critical root zone, all steps necessary to prevent the destruction or damage to protected trees shall be taken by the owner or developer or person in possession and control of the premises (the "tree preservation area"). All required protective fencing, frame or box, or other physical barrier must be erected around the tree preservation area and approved by the City Arborist.

Wooded Area Preservation

TREE PROTECTION AND WOODED AREA PRESERVATION



1. **Show the location of trees you want to save** on a plat of your property. Enlist the help of an arborist or forester to help decide which trees to remove and which to save. Some species are more sensitive to change than others.
2. **Harmonize your project with the natural terrain** and the trees you want to save. Consider this natural arrangement when you plan the location of buildings, sidewalks and driveways. You might also want to transplant trees that are less than two inches in diameter and in the path of buildings and other features.
3. **Protect “save” trees from soil compaction and severed roots** with barrier fencing of the critical root zone. Vehicles driving or parking over roots or construction materials stored over roots result in compaction of the soil which cuts off the air and water passages in the soil. Some cutting of roots near construction is inevitable but much is avoidable. Avoid soil compaction.
4. **Choose a builder who shares your commitment** to saving trees and who has tree preservation experience. In building as in most other undertakings, experience matters.
5. **Communicate your Tree-Preservation goals** to everyone working on the project. Work with planners and architects, engineers and utility managers to place improvements where the impact on trees will be at a minimum. Meet with all foremen, contractors and sub-contractors who will work on the site. Be sure dozer operators, truck drivers and others are aware of tree preservation signs, fences and rules.
6. **Provide aftercare** to help trees recover from the stress of construction. Water periodically, especially in times of drought, and mulch the trees. Remove aggressive or noxious plants from natural areas.
7. **In wildfire prone areas, break up solid areas of evergreens** and avoid planting trees close to buildings. Keep trees watered, regularly pruned and in healthy condition. Prevent build-up of needles and dead branches.

City of Hilliard Planting Standards
Endorsed by



Refer to section 7 Planting Guidelines Pages 14-18

Purpose: To increase transplanting success by providing municipalities with the most current and acceptable tree planting procedures. This information, prepared in specification format, will enable communities to convey specific requirements to contractors, developers, and/or volunteers. It contains the fundamental elements necessary to ensure transplanting success, and is intended to be a template that can be expanded to address other project issues.

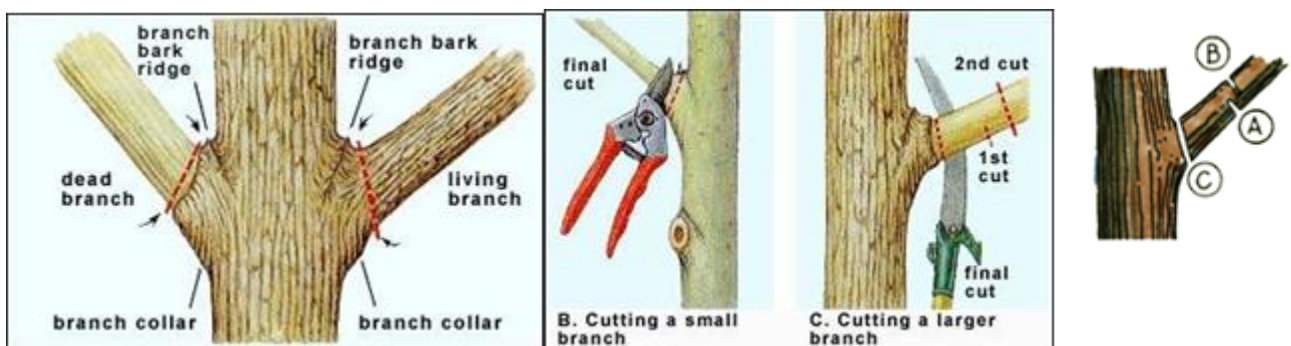
Endorsement: This information is approved and endorsed by the Ohio Nursery and Landscape Association, and the Ohio Department of Natural Resources Division of Forestry.

Assumptions: All plant material shall comply with American Standard for Nursery Stock ANZI Z60.1. All plant material has been selected based on site conditions and constraints.



Standards and Specifications for Pruning City of Hilliard Street Trees

1. ISA Certified Arborist shall supervise and be on the crew when trees are pruned, verification provided to Hilliard City Arborist before commencing contract and when requested.
2. Operations shall conform to OSHA (Occupational Safety & Health Administration) safety standards ANSI Z133.1, as well as state and local regulations.
3. Current Bureau of Workers Compensations certificates shall be required.
4. Personal and property liability policy shall be required for the amount specified by the City.
5. A List of references and work experience before work to commence, so the City Arborist can determine if company personnel have experience to perform proper pruning and safety.
6. Certified Arborist shall visually inspect each tree before beginning work.
7. If a condition is observed requiring attention beyond the original scope of work, the condition should be reported to the Hilliard City Arborist.
8. Equipment and work practices that damage living tissue and bark beyond the scope of work should be avoided, loss of contract may result.
9. Climbing spurs shall not be used when climbing and pruning trees. There are to be no exceptions to this requirement except when an aerial rescue is being performed.
10. Tree branches shall be removed as illustrated in ANSI A300 (part 1) 2001



- A: Make a partial cut from beneath
B: Make a second cut from above several inches out and allow the limb to fall.
C: Complete the job with a final cut just outside the branch collar.

11. Not more than 25% of foliage per tree shall be removed during pruning operations.



The above exhibit provides as example of removal of large and low limbs that if not removed will become weak, poorly attached limbs in the future. The removal of these limbs also develops a taller straighter trunk above the traffic of pedestrians and vehicles.

Never remove more than 1/4 of a tree's crown in a season. Where possible, try to encourage side branches that form angles that are 1/3 off vertical (10:00 o'clock or 2:00 o'clock positions). Central leader or leaders as appropriate should be developed. Secondary leaders should be suppressed by pruning or removal as directed by a certified arborist, allowing a strong central leader to be developed. Ideally, main side branches should be at least 1/3 smaller than the diameter of the trunk.

If removal of a main branch is necessary, cut it back to where it is attached to another large branch or the trunk. Do not truncate or leave a stub. For most deciduous (broadleaf) trees, don't prune up from the bottom any more than 1/3 of the tree's total height.

Topping and Lion's Tailing shall be considered unacceptable pruning practices for trees.



Don't Top Trees!

Topping starves and shocks trees by removing much of the tree's protective "crown" of leaves and branches. Without its "crown," a tree cannot produce the food necessary for growth, nor protect its sensitive bark from damaging sun and heat. The result is often cankering, bark splitting and the death of branches.

Topping weakens trees because the new branches that sprout from a severed limb are significantly weaker than the original limb. Weakened branches are much more likely to fall in a storm or in other adverse weather.

12. Cleaning shall consist of the removal of dead, diseased, and broken branches over 1/2" in diameter. Included shall be interfering branches greater than 1/2" that do not radiate out towards the branch tips.
13. Raising: shall consist of the selective pruning to provide vertical clearance.
14. All tree limbs extending over a sidewalk and/or pathway (trees in the planting strip between curb and sidewalk/pathway) shall be trimmed to such an extent that no portion of the same shall be less than nine feet above the sidewalk/pathway. Tree limbs extending over the streets shall be trimmed in such an extent that no portion of the same shall be less than eleven feet.

Trees in excess of 25 feet shall be pruned so that they have a balanced canopy of no less than twelve feet above the sidewalk, pathway and/or street.

Under no circumstances should low limbs be raised so that the canopy is less than half the total tree height.

15. All tree debris shall be removed from the site and disposed of legally.

Appendix

Information used in this brochure found at the following links:

Agriculture and Natural Resources

www.extension.osu.edu/counties

American Nursery Landscape Association

www.anla.org

City of Hilliard

www.cityofhilliard.gov

International Society of Arboriculture

www.isa-arbor.com

Ohio Chapter ISA

www.ohiochapterisa.org

Ohio Department of Agriculture

www.ohioagriculture.gov

The National Arbor Day Foundation

www.arborday.org

The Ohio Department of Natural Resources

www.dnr.state.oh.us

The Ohio State University

www.webgarden.osu.edu

Tree Care Industry

www.natlarb.com

Terms and Definitions

References used in the compilation of this glossary include:

Michael A. Dirr, Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses. (Champaign: Stipes Publishing, 1998)

William M. Harlow, Fruit Key and Twig Key to Trees and Shrubs. (New York; Dover Publications, Inc., 1946)

William Trelease, Winter Botany: An Identification Guide to Native Trees and Shrubs. (New York; Dover Publications, Inc., 1931)

For the purposes of this Brochure the following definitions shall apply unless the context clearly indicates or requires a different meaning.

Acidic soil: A soil with a pH below 6.6 as determined by a soil test.

Alkaline soil: A soil with a pH above 7.3 as determined by a soil test.

Branch Bark Ridge: A ridge of bark that forms in a branch crotch and partially forms around the stem resulting from the growth of the stem and branch tissues against one another. It marks where branch and bark tissue meet.

Branch collar: "Shoulder" or bulge formed at the base of a branch by the annual production of overlapping layers of branch and stem tissues.

Caliper: Diameter of a young tree measured at 6" (for trees up to and including 4" caliper) or 12" (for trees over 4" caliper) above the ground line.

Canopy: Upper part of a tree. It includes branches and leaves.

Central leader: The main stem of the tree from which other branches develop. In most cases, it is the trunk.

Certified arborist: Professional arborists tested by the International Society of Arboriculture (ISA). A certified arborist must possess the technical competence to manage trees in the residential, commercial and private landscape. They must also earn the continuing education units (C.E.U) required by ISA.

City Arborist: The person employed by the City to perform the duties and enforcement required hereunder:

- (1) Promote the preservation of trees and the replacement of major trees removed in the course of land development so as to mitigate the impact of development;
- (2) Promote the proper utilization of landscaping as a buffer between certain land uses and to minimize the possibility of nuisances including potential noise, glare, litter, and visual clutter of parking and service areas;
- (3) Protect, preserve and promote the aesthetic appeal, character and value of neighborhoods with the placement of landscaping;
- (4) Offer a minimum standard for the consistent appearance of plant material in the community landscape; and
- (5) Soften the appearance of building masses and paved areas and reduce the generation of heat and storm water runoff.

Coniferous: Woody plant that produces seeds in cones. Most coniferous trees are termed "evergreen" since they keep their needles for two or more years before they die and drop off the plant.

Cultivar: A cultivated variety that has noticeable differences from the species, but these differences can only be retained through propagation by vegetative means such as cuttings or grafting.

Deciduous: Plants that normally have leaves only during the growing season and lose their leaves during the dormant season.

Dieback: The dying back of stems due to adverse weather conditions, insects, diseases or other causes.

Dormant: The period of the year when a plant is not growing.

Enforcement Officer: The City Arborist, or other person assigned by the Mayor, shall be known as the Enforcement Officer and shall enforce all provisions of Chapters 1331 and 921 pursuant to the following procedures. Whenever the Enforcement Officer determines that there has been a violation of this Code or has grounds to believe that a violation has occurred, notice shall be given to the owner, developer or person or persons in possession and control of the premises and responsible.

Flush Cuts: Pruning cuts that originate inside the branch bark ridge or the branch collar, causing unnecessary injury to stem tissues.

Lateral: A branch originating from the main trunk.

Lions Tailing: Lion-Tailing can be described as the excessive removal of branches from the lower two thirds of a stem or branch, or the removal of only lower and interior branches when pruning. Lion-tailing is harmful to trees and it increases susceptibility to wind-failure.

Person: Any person (including a person in possession of property), corporation, partnership, company, association, contracting firm or other entity, including those employed under a contract with the City.

pH Value: A numeric designation of acidity and alkalinity in soil. Soils are either acid (pH value less than 7), neutral (pH value 7) or alkaline (pH value greater than 7).

Photosynthesis: A process by which plants make sugar for energy by using the pigment chlorophyll, light energy from the sun, carbon dioxide from the air and water. This process produces sugar and gives off oxygen.

Public places: All property, sites or places owned by the City, including but not limited to park land, rights-of-way and municipal buildings.

Public trees: All shade and ornamental trees now or hereafter growing on any street, highway or any public places.

Root collar “trunk flare”: The transition zone between the stem and the root sometimes recognized in trees and seedlings by the presence of a slight swelling just above the roots of a tree.

Street or highway: The entire width of every public way, easement or right-of-way when any part thereof is open to use by the public, as a matter of right, for purposes of vehicular and pedestrian traffic, and shall include alleys.

Sucker Growth: A secondary shoot produced from the base or roots of a woody plant that gives rise to a new plant)

Tree lawn: That part of a street or highway, not covered by sidewalk or other paving, lying between the property line and that portion of the street or highway usually used for vehicular traffic.

Trees:

Large trees: Those attaining a height of at least fifty feet.

Medium trees: Those attaining a height of twenty-six to forty-nine feet.

Small trees: Those attaining a height of not more than twenty-five feet.

Topping: A poor maintenance practice often used to control the size of trees; involves the indiscriminate cutting of branches and stems at right angles leaving long stubs. Synonyms include rounding-over, heading-back, dehorning, capping and hat-racking. Topping is often improperly referred to as pollarding.

Sapwood: The active xylem (wood) found right under the cambium that stores water and carbohydrates and transports water and nutrients.

Soil: Unconsolidated mineral and organic material on the immediate surface of the earth, serving as a natural medium for the growth of plants.

12.4 MASTER STREET TREE PLAN

At its regularly scheduled meeting on May 1, 2013, the Hilliard Shade Tree Commission unanimously approved the following Master Street Tree Plan:

Objective – A low risk, resilient, and perpetually functional urban forest

Strategy – Through proper tree selection, placement and time, the City of Hilliard will reduce the overabundance of any one species to create a well-adapted, sustainable, and effective community resource.

Target – Weak Dominance and Mixed Canopies: No tree genus will comprise more than 15% of public rights-of-way.

Procedure – When new or replacement street trees are required, selection will be based on site considerations (e.g. treelawn width, above or below ground obstructions, soil texture, etc.) and the percentage of existing tree genera.

Considerations – While each street will have a mixture of tree genera, trees on a particular street (based on other considerations) will be of the largest and same size class. When selecting the appropriate trees, consider the most severe pests, as well as which existing trees have adapted well (are of a large size) and which existing trees are causing problems.

The Hilliard City Arborist maintains a Master Street Tree list showing the preferred species of tree for each street in the City. Contact the City Arborist for a copy of this list.